

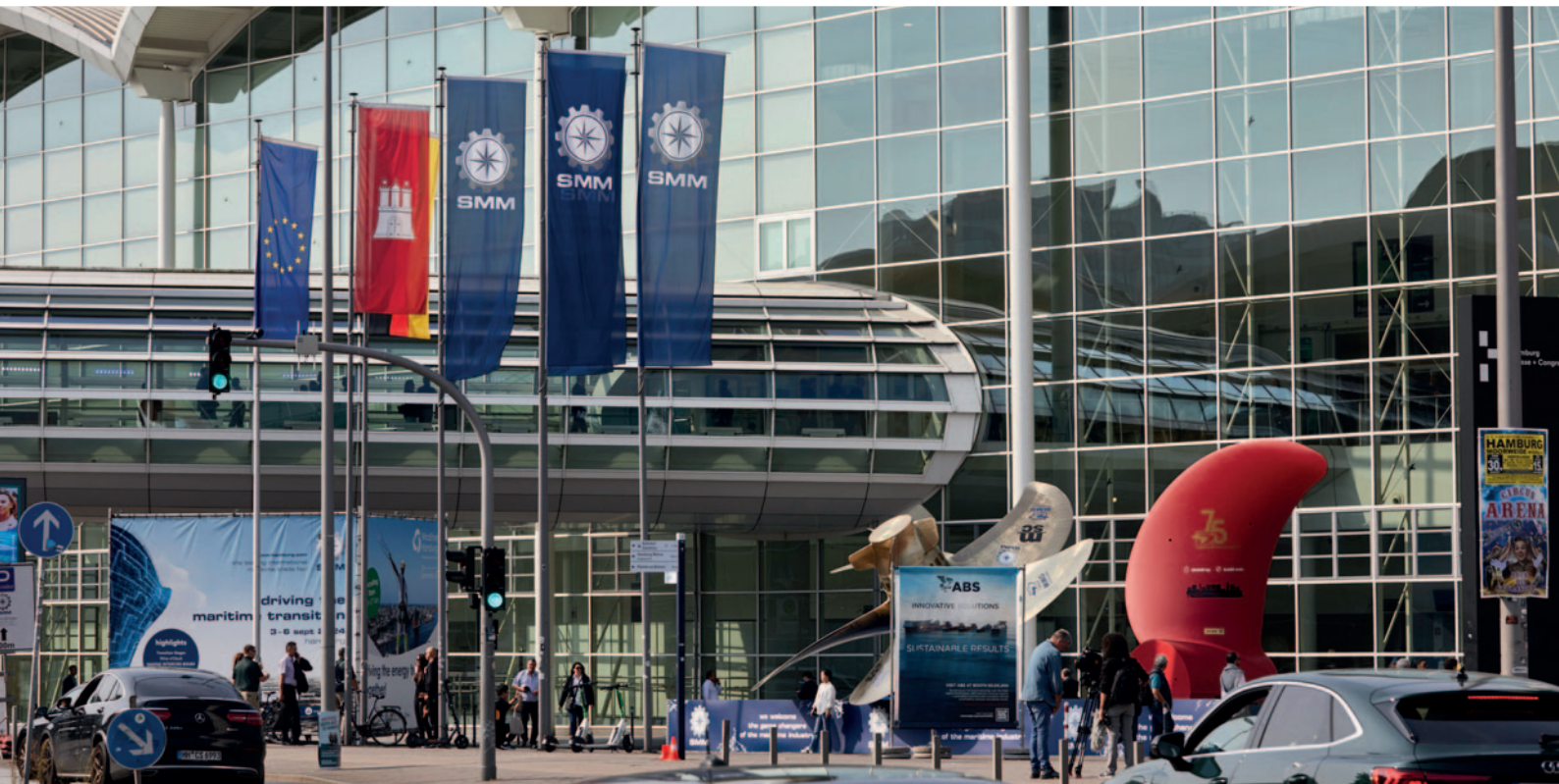
SUBSEA

PROTECTION AND PERFORMANCE



Magazine

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Corrosion damage very repair made ✓ easy



Subsea Industries has a product for filling and building up a corroded and pitted steel surface to its original form prior to recoating with Ecoshield. Ecofix is as tough as the steel itself, machinable, and can be used to repair most pitting or corrosion damage on rudders, stabilizer fins, thrusters and other underwater gear.

Ecofix is used in combination with Ecoshield, the ultimate rudder protection coating. When a rudder or other piece of underwater ship gear has not been properly protected, the surface will become corroded.

Cavitation can cause severe pitting. The steel needs to be restored to its original shape with a smooth surface prior to recoating.

This is where Ecofix comes in. It is a superior, tested and proven filler. Because it uses the same basic resin as Ecoshield, the coating can be applied just one hour after the filler. The bonding and hardness are extraordinary. This is the effective alternative to very expensive fillers. And because it is part of the Ecospeed/Ecoshield family, it is fully compatible with our coatings.

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Editorial: Repairs have no impact on the longevity and smoothness of our coatings

Ecospeed is a very unusual ship hull coating: in addition to its proven durability and toughness, any mechanical damage can be repaired without any consequences to the integrity, durability, longevity or smoothness of the coating. Other hull coatings in general use, such as antifouling and foul release coatings, cannot be successfully repaired when damaged. Attempts to repair them leave a rougher hull with a resulting increased fuel penalty.

Why would you need to repair Ecospeed? Not because the coating is degrading: it does not degrade over time. There are two main circumstances where repair might be needed.

Firstly, if hot work is carried out on the ship. This will destroy the coating in the area of the welding. But when the surface is prepared and the coating reapplied, perfect adhesion to the existing coating is achieved. This is for instance the case at new-



build. Often the ship is painted at the block state before being assembled in drydock. The erection joints are then coated and the new layers blend in perfectly with the existing ones.

Secondly, coatings are weaker than the underlying substrate, so you are going to have damage on the coating from time to time, caused by impact.

These damages can be repaired without reducing the longevity of the first application, or the smoothness of the hull. And the repair is as tough and long-lasting as the original.

A key reason for Ecospeed's repairability is that it consists of a single, homogeneous coating of vinyl ester



It is impossible to repair an antifouling coating that has degraded over time and restore the hull to a smooth finish.



Hull of a ship where the antifouling coating has been "repaired" in drydock. This ship is about to undock.



Ecospeed coated hull where hot work inside the ship has damaged the coating.



The damaged Ecospeed coated hull repaired, leaving the hull as smooth as when first painted.

and glass, applied directly to the steel or other substrate without primer, mid-coats, tie-coats, top-coats or anything else. Most other coating schemes consist of a series of different coatings made up of several layers of non-homogeneous substances such as zinc-rich epoxy primer, epoxy mid-coats, tie-coats and finally topcoats of antifouling or foul-release paint. Trying to repair such a coating scheme and leave it as good as the original is impossible. (This subject is covered in depth in a

White Paper we published: Hull Coating Degradation – the Hidden Cost. You can contact me to receive a copy of this White Paper.)

Another major reason is that the Ecospeed family of coatings has a 3-hour minimum overcoat time *but no maximum*. This means the second and, if required, third coat can be applied after three hours, three days or three weeks or more and will bond perfectly to the previous coat. This is not the case with most other

coatings. Epoxy coatings, for example, have a very finite time for overcoating and one layer must still be “tacky” when the next layer is applied. That is a problem. So many conditions occur during coating application. Is it exactly 24 hours? 26? 22? How can you be sure? It is always a more or less situation. Getting the “tackiness” factor right determines whether the coating is applied correctly or not. It’s a fine point requiring judgement and there is a very short window for application. It also means that when applying new paint over old, it will not adhere properly.

The reparability of Ecospeed is a key factor in the longevity that the coating can achieve. Ecospeed correctly applied can survive 30, 40, 50 years, and the repairs can survive just as long. The reparability of the coating is an important factor which enables us to offer a warranty of 10, 20 and even 35 years for our coatings.

When designing or maintaining ships and looking at their sustainability, the ease of maintenance and the effect of repairs on the durability and smoothness are very important. This is the only way to be able to coat a ship for 50 years without repainting and without the coating becoming very rough over time.

Subsea Industries NV
Boud Van Rompay
Founder

Ecospeed solves corrosion of scrubber pipes and outlets

At the start of 2016, the inside of a scrubber was coated with Ecospeed for the first time. Since then, our coating system was applied on the scrubber pipes, recycle tanks, outlets and diffusers of a large number of ships. When one of these came into drydock two years after application, the condition of the recycle tank surprised those involved that had not before seen the amazing results Ecospeed achieves.

The project manager of Zhejiang Energy Marine Environmental Technology (ZEME) was “extremely satisfied with the performance of the coating,” he said that “Ecospeed offered the best acid and alkali resistance compared to other brands of paint I used before.”



Scrubber recycle tank prior to Ecospeed application. The corrosive residue has caused severe damage to the steel.



Recycle tank after application of first Ecospeed layer.

The Shipyard Paint Supervisor was shocked by the condition of the recycle tank coating. According to him he has never seen a coating in such good condition in a recycle tank as Ecospeed. “The coating is looking fresh after cleaning,” he says. “No hot work is needed before painting, and only several touch-ups are needed, with minimal paint work.”

“This really benefits the whole project’s progress,” said the Shiprepair Manager of Wenchong Shipyard. “There was always lots of steel work (renewals, welding repairs) before recoating a recycle tank. For this recycle tank, no steel plates needed to be renewed, no grit blasting, only cleaning with power tools and quick brush applications for spot repairs. This saves more than 10 days.”



Application of second Ecospeed layer in scrubber tank.



After two years of chemical residue passing through, the Ecospeed coating is still in excellent condition and has protected the steel from corroding.

No damage from chemicals

Because of the tight regulations on emissions in the shipping industry, the installation of an exhaust scrubber system has become increasingly widespread. Due to the highly corrosive nature of the effluents from scrubbers, this unfortunately has also led to an increase of corrosion damage on scrubber pipes and outlets which can result in water ingress into the engine room, ballast tanks and cargo holds.

Ecospeed however is highly chemically resistant. Using the coating to protect the exterior outlets as well as the interiors of scrubbers prevents corrosion damage and its consequences.

Ecospeed is a lasting coating that will withstand the hazardous pollutants and protect the scrubbers for years to come.

Repairing corroded pipes

If an existing scrubber suffers corrosion damage, it is not too late to repair it. Subsea Industries' sister company Hydrex regularly replaces scrubber overboard pipes. This is done on-site without the ship needing to go to drydock.

In all cases, the new pipes installed by Hydrex are protected with Ecospeed. If no welding needs to be carried out near the coated area, the new pipes are coated in advance. If this is not an option, Ecospeed is applied after the new pipe is installed and all welding completed.



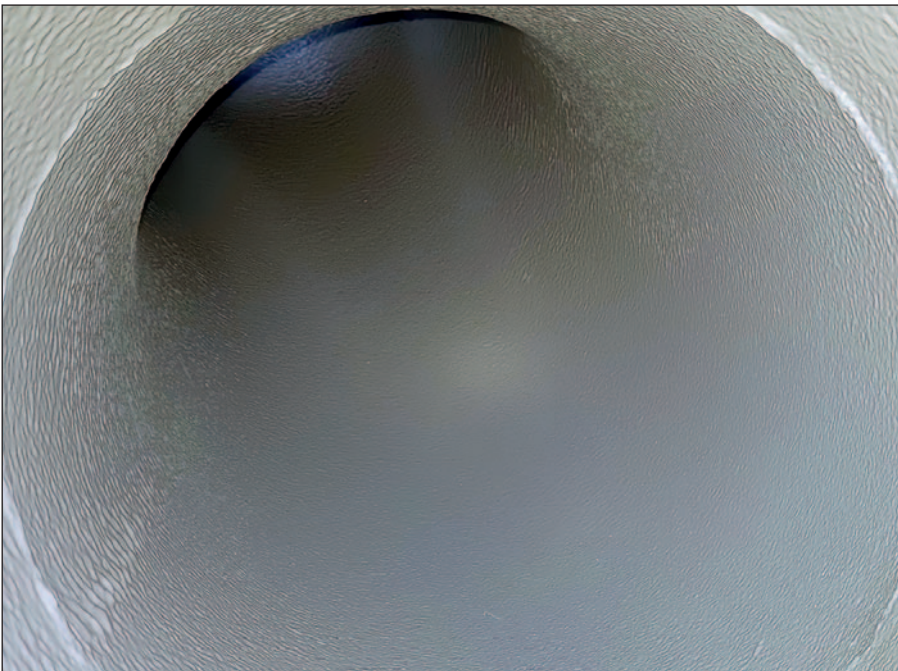
Ecospeed application on scrubber outlet.



Ecospeed is applied in two identical layers.



No repaint will be needed during future dockings.



Scrubber pipe after application of first layer.

Pipes can also be replaced preemptively. If a pipe starts to corrode, a leak is just a matter of time. By per-

forming the replacement before the leak occurs, a costly, unscheduled repair can be avoided.

Conclusion

Several benefits make Ecospeed the perfect choice to protect scrubbers.

1. The coating system is highly chemically resistant. Considering the nature of the process taking place inside the scrubber, this is essential for our customers.
2. Ecospeed lasts the lifetime of a vessel. No repainting will need to be scheduled during future dockings of the ship. At most some minor touch-ups may be required. This saves time and money.
3. It is a true biocide-free solution. The coating is 100% non-toxic so there is no negative effect on the water quality or the marine environment at any point of its application or use. ■

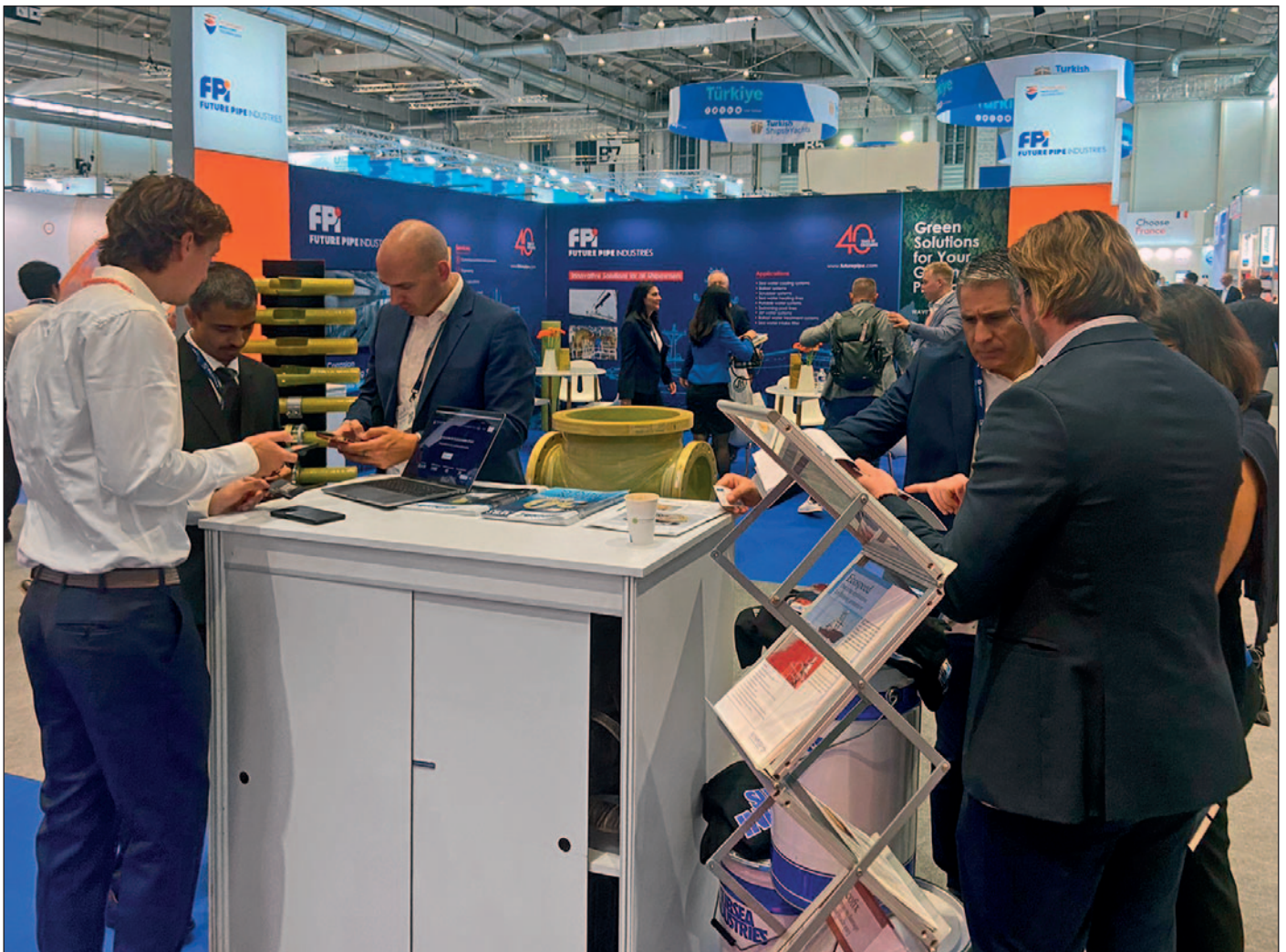
Subsea Industries and Hydrex at SMM 2024

In September Subsea Industries and Hydrex took part in SMM 2024 in Hamburg, together with 2,200 other exhibitors. This year's event was attended by 48,000 trade visitors from more than 100 countries, once again highlighting SMM's importance as the leading international maritime trade fair.

“The mood was excellent at the leading international maritime trade fair as well-established enterprises and start-ups alike laid out before the maritime business world the technological innovations and solutions it



Manuel Hof, Sales & Production Executive, Subsea Industries giving a presentation for a group of visitors during a tour of the Holland Pavilion.



The booth maintained a friendly, busy atmosphere throughout the four-day show.



The Subsea Industries and Hydrex team at SMM, L-R: Konstantin Lambrechts, Sales Officer, Subsea Industries, Timoty Verhoegstraete, Head of Technical Department, Hydrex, Manuel Hof, Sales & Production Executive, Subsea Industries, Thibaut Wolfs, Special Projects Engineer, Hydrex, Martijn van Ruiten, Senior Researcher Hydrex Rotterdam.

needs to build a green and digital shipping future,” the organizer said. “Five specialist conferences and a wide range of networking opportunities brought together high-level decision-makers from politics and business to enjoy a fireworks of presentations, discussion sessions and expert panels. Again, the key issues

ensuring a successful transformation of the industry – decarbonisation, digitalisation, recruiting and maritime security and defence – were high on the agenda of SMM.”^[1]

As part of the Dutch pavilion, the Hydrex/Subsea Industries booth was a popular spot. Representatives of

both companies were ready to give detailed information and knowledgeable advice to visitors.

Many existing customers, Subsea Industries and Hydrex agents, technical people from all phases of shipbuilding and many interested newcomers to Subsea Industries and Hydrex dropped by to enjoy the friendly, comfortable but business-like and informative atmosphere. Much new business was conducted.

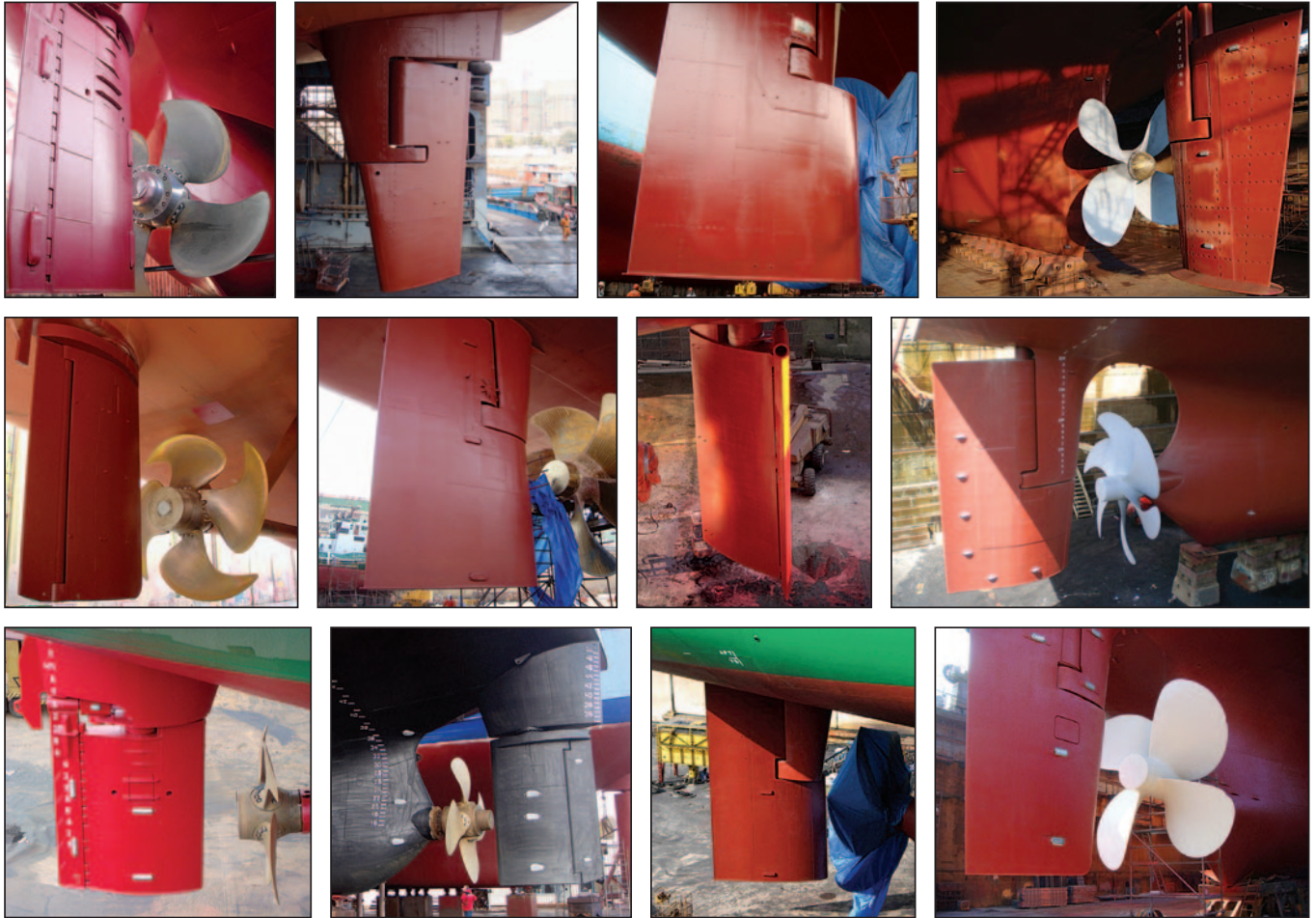
SMM 2024 was a great success, and we would like to thank all of you who visited us there for coming. We look forward to working with you on an ongoing basis. If you require assistance with a vessel or want to find out how our products or services can benefit you, feel free to contact us. We will gladly help you in any way we can. ■



The Hydrex and Subsea Industries team giving information about our products and services during SMM.

^[1]Source: <https://www.smm-hamburg.com/en/>

LASTING PROTECTION



Ecoshield gives a very thorough and lasting defense against cavitation and corrosion damage for a ship hull's entire service life.

The coating equally provides the rudder with an impenetrable protective layer while its flexibility enables absorption of the forces that are produced by cavitation. This prevents the damage normally caused

by this phenomenon.

Without proper protection against cavitation and the resulting erosion and corrosion damage, the financial consequences can be severe.

By removing the existing paint layers and applying Ecoshield on the rudder we can break the never ending cycle of painting, suffering damage, having

to perform extensive repairs in drydock followed by a full repainting, again and again.

With an Ecoshield application no full repaint will be needed during drydocking. Ecoshield is guaranteed for ten years. At the most, minor touch-ups will be required.

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SUBSEA

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Subsea Industries NV, was founded in 1983 specifically to take care of the design, development and marketing of what has become an evolving line of underwater hull and propeller

cleaning equipment as well as the line of hard hull coating systems.

All products produced by Subsea Industries have the same goal in

mind: To keep the underwater part of your vessel in the best possible condition for its entire lifetime at the best possible performance.

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